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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,984	11/26/2001	Shunichi Seki	111184	4300

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EXAMINER

DOLAN, JENNIFER M

ART UNIT	PAPER NUMBER
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2813

DATE MAILED: 07/08/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/991,984

Applicant(s)

SEKI ET AL.

Examiner

Jennifer M. Dolan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19 is/are allowed.
- 6) ☒ Claim(s) 12-17, 20-25, 28, 33 and 35-38 is/are rejected.
- 7) ☒ Claim(s) 18, 26, 27, 29-32 and 34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

This action is in response to Amdt. C, filed 4/15/03

Claim Objections

1. Claim 38 is objected to because of the following informalities: “mater” should be replaced by –material--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 21 and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 21 and 22 recite “an effectively optical area having a first and second set of electrodes” and “an organic EL layer formed above each of the first and second set of electrodes.” In the specification and drawings, there appear to be no parts/components which correspond to a second set of electrodes in the effectively optical area and covered by an organic EL layers, and thus claims 21 and 22 are not enabling for one skilled in the art to understand the invention. For the purposes of examination, the ‘second set of electrodes’ in claims 21 and 22 will be ignored.

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4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 13-16, 33, and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 recites the limitation ‘ a bank layer disposed between each of the first and second set of electrodes.’ It is unclear from the claims and specification whether the bank layer is disposed between each electrode, such that there is a bank layer separating each adjacent electrode within the first set, within the second set, and between the first and second set, or whether there is simply a bank layer separating the first set of electrodes from the second set of electrodes. For the purposes of examination, it is assumed that the bank layer is separating all closest adjacent electrodes, including all electrodes of both the first and second sets.

Regarding claim 33, the claim recites “a substrate where the plurality of pixels and dummy pixel.” It is unclear as to what the applicant regards as the invention. For the purposes of examination, it is assumed that the portion of the claim reads “a substrate where the plurality of pixels and dummy pixel are disposed.”

Claim 36 recites the limitation “wherein a plurality optically active areas, each of which are surrounded by the dummy areas.” It is unclear in this claim as to what the applicant regards as the invention. Furthermore, “the dummy areas” lacks antecedent basis in the claims, since only a single dummy area is claimed earlier. For the purposes of examination, it is assumed that the portion of the claim reads: “wherein a plurality of optically active areas are provided, each of which are surrounded by dummy areas.”

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 22 is rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent Publication 10-012377 to Shimoda et al. (cited by applicant).

Shimoda discloses an organic EL device (abstract) comprising: an effectively optical area (figures 1 and 2, top or bottom surface in entirety) having a first set of electrodes (103, 203) and an organic EL layer (106-108) formed above each of electrodes (figure 1), the organic EL layer being formed in areas not having the electrodes (figure 1c) and which are supposed to be the effectively optical area.

8. Claims 12, 17, 20, 21, 23, 24, 35, 37, and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,903,246 to Dingwall.

Regarding claims 12 and 17, Dingwall discloses an organic EL device comprising: a first and second set of electrodes (anode layers for OLED devices in optically active area P1-P480 and in dummy area Pr respectively, see figs. 1 and 2); an organic EL layer (organic layers; figure 1) formed above each of the first and second set of electrodes (see figures 1 and 2; column 4, lines 55-60); an effectively optical area (P1-P480) in which the first set of electrodes is formed; and a dummy area (Pr) disposed around the effectively optical area (figure 2) and not over the

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first set of electrodes in which the second set of electrodes is formed (implicit in that P1-P480 and Pr all comprise O-LEDs, and the O-LED structure is given as in figure 1). Since the organic EL layer is formed directly on the electrodes, the organic EL layer in the dummy area must be disposed on a layer made of the same material as the electrodes.

Regarding claim 20, Dingwall discloses that both the effectively optical area and the dummy area are provided on a substrate (figure 1), and portions in the optical area and the dummy area have substantially the same cross sectional structure (column 5, lines 46-53).

Regarding claim 21, Dingwall discloses an organic EL device comprising: an effectively optical area (P1-P480) having a first set of electrodes (anode layer; figure 1); and an organic EL layer formed on each of the first set of electrodes (figure 1), wherein the organic EL layer is formed both on areas supposed to be the effectively optical area (P1-P480) and on areas not over the first set of electrodes which are outside the effectively optical area (Pr; Pr is an O-LED, and thus has the structure of figure 1, including the organic EL layer).

Regarding claim 23, Dingwall discloses an electronic device comprising the organic EL device (column 1, lines 13-20; column 2, lines 5-27).

Regarding claim 24, Dingwall discloses an EL device comprising: an optically active area (P1-P480) including a plurality of pixels (figure 2), a first EL layer disposed in the optically active area (figure 1); a dummy area (Pr) including a dummy pixel (column 4, lines 47-64) which substantially does not relate to display (column 5, lines 55-59), being adjacent to the active area (figure 2); a second EL layer disposed in the dummy area (dummy pixels are O-LEDs, and thus have structure of figure 1).

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Regarding claim 35, Dingwall discloses that the dummy pixels are arranged in lines (figure 2).

Regarding claims 37 and 38, Dingwall discloses that the OLED structure for the active and dummy regions includes hole injection material and luminous material (figure 1).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 25, 28, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dingwall in view of U.S. Patent No. 6,580,212 to Friend.

Dingwall discloses a substrate with a plurality of pixels and dummy pixels (figures 1 and 2); an electrode (anode in figure 1); and circuit element portions including TFTs (figure 2).

Dingwall fails to disclose a bank dividing the optically active area into a plurality of pixels.

Friend discloses a bank (21, 64, 76) dividing the optically active area into a plurality of pixels (figure 4), with an electrode (24) in an area partitioned by the bank, the first EL layer (23) being provided on the electrode; and a circuit element including a TFT provided between the first EL layer and the substrate (figure 8), wherein the bank and TFT overlap (figure 8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the pixel structure of Dingwall such that a bank divides the optically active

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area into a plurality of pixels, as taught by Friend. The rationale is as follows: One of ordinary skill in the art at the time the invention was made would have been motivated to provide a plurality of banks in the optically active area, because Friend teaches that the bank layer helps redirect light outside of the device, such that cross talk between pixels is reduced, and contrast between emitting and non-emitting pixels is enhanced (see Friend, column 2, lines 45-57; column 9, lines 1-6).

Allowable Subject Matter

11. Claim 19 is allowed.

12. Claims 18, 26, 27, 29-32 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. Claims 13-16 and 36 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

14. The following is a statement of reasons for the indication of allowable subject matter: Regarding claims 26 and 30-32, the prior art of record fails to provide a motivation for placing a bank layer in the dummy region. Regarding claims 27 and 29, the prior art of record fails to suggest a bank layer including a plurality of layers. Regarding claim 34, the prior art of record fails to teach that the dummy pixels and the pixels are substantially equal in pitch. Regarding claim 36, the prior art of record fails to suggest OEL devices with dummy pixels surrounding a plurality of optical areas. The closest art of record is U.S. Patent No. 5,903,246 to Dingwall,

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which teaches the use of dummy pixels, but fails to disclose a bank layer or specific arrangements of the dummy and optical pixels. The features of the allowable claims improve upon the prior art by improving the uniformity of luminescent material deposition deposited by ink-jet techniques, such that display performance parameters like luminance and chrominance have enhanced uniformity.

Response to Arguments

15. Applicant's arguments filed 4/15/03 have been fully considered but they are not fully persuasive.

Regarding claim 22, the Applicant argues that Shimoda does not disclose the features of the invention, and that the examiner is relying on the outside area of the pixel as a dummy area. This is not persuasive, because claim 22 does not specify the presence of a dummy area. It only requires that the organic EL layer is formed above the electrodes, but also in areas not having the electrodes which *are* supposed to be the effectively optical area. Thus, the outside area of each pixel in Shimoda, which is still part of the effectively optical area, and which has the EL layer, but no presence of the electrode, meets the limitations in the claim language of claim 22.

Arguments pertaining to all other claims are moot in view of the new grounds of rejection.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer M. Dolan whose telephone number is (703) 305-3233.

The examiner can normally be reached on Monday-Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl W. Whitehead, Jr. can be reached on (703) 308-4940. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Jennifer M. Dolan
Examiner
Art Unit 2813

jmd
June 26, 2003


CARL WHITEHEAD, JR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800